

# **Attachment A: Executive Summary of the Traffic & Transportation Division's Review of the Town Center Master Plan**

**September 5, 2001**

## **Introduction**

With the completion of the draft Town Center Master Plan, the City's Traffic & Transportation Division has been asked by the Planning Commission and the Traffic & Transportation Commission to review and comment on the transportation-related issues in the document. The Commissions and the Division feel that the review is a necessary step in ensuring that the document is consistent with the goals and objectives shown in the proposed Citywide Master Plan Transportation Chapter, and that the Plan represents a concept which functions adequately from a transportation perspective. To accomplish this task, staff prepared this report, which compares projected year 2025 transportation conditions for the current master plan and the proposed master plan. The following section briefly describes regional year 2025 conditions, regardless of growth in the Town Center.

## **Overview of Future Conditions**

Currently, mobility throughout the City is limited due to traffic congestion generated by local and regional trips. Over the next twenty years, the regional population and employment is projected to grow by approximately 40%. Even if Rockville stopped all future growth within its city limits, traffic congestion on the City streets will increase. Regional growth, combined with anticipated development within the City will stress the existing and proposed infrastructure.

The best available tool for assessing mobility issues in a master plan context is a travel demand model. M-NCPPC's model forecasts vehicular and transit travel demand for future scenarios, with regionally accepted land use and transportation network estimates through the year 2025. The City contracted M-NCPPC to apply the travel model, forecasting vehicular and transit demand for both the current Master Plan and proposed Master Plan. A summary of the key findings is contained in the following section.

## **Findings**

Below is a summary of the differences between the current and proposed Town Center Master Plans.

- (1) **Finding:** Compared to the current plan, the proposed plan adds 790 households, 3300 office employees, 100 retail employees, 125 other commercial employees, and reduces industrial employees by 160. This translates to approximately 4000 new PM peak hour vehicle trips with an origin or destination to the Town Center.

**Finding:** Due to the influx of concentrated employees in the proposed master plan, the transit usage by employees increases from 14 percent (existing master plan) to 18 percent. Residents use transit approximately 30 percent of the time when traveling to work, in either land use scenario. This represents the highest transit use by residents and employees in the City, and quantifies the benefits of concentrating development near major transit hubs. The citywide average for residents and employees is 10% and 17%, respectively.

**Comment:** Strategies to improve Metrorail / MARC Station accessibility – specifically feeder bus and auto (parking) – should be expanded upon in the document.

- (2) **Finding:** Regarding year 2025 traffic congestion, 8 of the 13 Town Center intersections incur increased congestion by 1% - 3%. Of the remaining five locations, three intersections possess minimal congestion differences, MD 28 and Maryland Ave. increases by 7%, and Maryland Ave. / Fleet Street increases by 10%.

**Comment:** The plan should include stronger language supporting large-scale improvements to the MD 355 corridor, such as the deck-over concept under study by MD SHA.

- (3) **Finding:** While congestion is slightly worse in the proposed concept plan, average trip lengths for City residents decrease by approximately 10%. This occurs due to the opportunities of jobs and shopping closer to where residents live. However, employees within the City travel approximately 10% longer, due to the slight increase in congestion.

**Comment:** This finding reinforces the need to create a mixed-use activity center, improving accessibility to shopping and jobs. The mixed-use development should discourage longer distance trips by residents.

- (4) **Finding:** Travel times to and from the Town Center would increase slightly under the proposed master plan scenarios, as illustrated in Appendix C.

**Comment:** The 4,000 additional trips resulting from the proposed Plan make a minimal difference compared to the current Plan, when spread across the City transportation system.

- (5) **Finding:** Mobility will decrease regardless of growth in Rockville.

**Comment:** The urban design of city streets must continue to be retrofitted to provide better mobility for transit users, pedestrians and bicyclists. Sidewalks and bicycle facilities must be safe, connect to activity centers, and be accessible to residents. The transportation system as a whole will need to be improved so that all modes of transportation are accessible and competitive with the automobile with respect to travel time, convenience and cost.

Attached is a “Consumer Reports” scoring system, with a short description, for each applicable transportation objective. The appendices include the background data developed to determine the score. The scores reflect a quality of service rating for each objective, as perceived by the Traffic & Transportation Division. The accompanying text compares the two Town Center concepts. Below are recommendations from the Traffic & Transportation Division, based on a review of the results of all transportation goals and objectives.

## **Conclusion**

The division supports the concepts outlined in the draft plan. It would be easier for residents to find jobs and shopping opportunities closer to where they live under the proposed plan scenario. In either scenario, residents choosing to drive longer distances will experience increases in travel time to their destinations. Facilities such as the Corridor Cities Transitway, Metrorail, and MARC will provide alternatives for employees working in Rockville.

The City must be proactive in continuing to create an environment that does not rely on the automobile for travel. To address this critical issue, the City needs to ensure that the land use patterns, urban design, and transportation system provide its residents with an environment in which goods and services are accessible. Although many roadways will be congested due to regional traffic, proposed land use development in the Town Center, as outlined in the proposed Master Plan, is critical to provide residents opportunities to travel shorter distances to find goods and services. The draft Town Center Master Plan outlines land use patterns and urban design features that will promote such an activity center.

The Traffic and Transportation Commission supports the proposed Master Plan as outlined in a letter from the Chairman of the Commission.

## **Comparative Analysis of Current and Proposed Town Center Master Plans**

The purpose of this study is to provide decision-makers with sufficient information to make educated choices about the future of the Town Center. This document lists the strengths and weaknesses from a transportation perspective. The Traffic & Transportation Division understands that each decision-maker weighs the merits of each transportation objective differently, thus the analysis does not assign weights to each transportation objective. Although a weighting system would provide an overall score for transportation quality of service, it would likely open a debate regarding the perceived value of each transportation objective.

The Draft Town Center Master Plan contains a number of references to transportation improvements related to pedestrians, bikes, transit, automobile, and parking access. To responsibly assess the recommendations, three types of assessments are necessary: (1) a qualitative assessment of conformance with the proposed transportation goals and objectives, (2) use of a travel demand model to assess the balance of land use and transportation, and (3) a feasibility study to assess the viability of the medium scale recommendations (such as new east-west access points). This document contains the first two analyses listed above, the third form of analysis should take place when implementation is considered and funding is available for a feasibility study.

### **Format of Transportation Analysis**

The report summarizes a comparison of the current (1993) and proposed Town Center Master Plans. The comparison assesses the quality of the transportation system by select goals and objectives. The city-wide master plan goals and objectives were designed to assess various transportation applications, including master plan analysis, CIP project implementation, and budget / on-going activities. The mobility (goal 1), accessibility (goal 2), and neighborhood oriented (goals 3 & 5) goals pertain to the master plan analysis at a macro-level scale, and are scored in the report. Development review and CIP implementation will involve all goals at a micro-level scale, due to the improvements to access and mobility, while ensuring sensitivity to safety issues, neighborhood and environmental impacts. The sixth goal, fostering a safety and maintainable system, tracks the quality of the on-going activities funded through the annual budget process.

With regard to the comparison of the two town center concepts, two techniques were applied to score the master plans: (1) a quantitative analysis was performed on mobility related objectives, and (2) a qualitative analysis was conducted to compare the recommended improvements / urban design features of the plans as related to accessibility and neighborhood issues.

The best available tool for assessing mobility issues in a master plan context is a travel demand model. M-NCPPC's model forecasts vehicular and transit travel demand for future scenarios, with regionally accepted land use and transportation network estimates through the year 2025.

The forecasts predict the impact of land use activity<sup>1</sup> on transportation demand. It is important to note that land use and urban design plans throughout the region are not simply input into a travel model. Local government comprehensive planners must predict the amount of land activity that will exist in the forecast year scenarios, in this case 2025. For this modeling exercise, regionally accepted land activity forecasts were applied for the entire region, except for the Town Center, where the Long-Range Planning Division projected new forecasts.

Two important products of the model are PM peak hour vehicular demand for roadways and transit demand by route. The model includes forecasts for roadways ranging from freeways down to collector streets, such as Nelson Street. To create such estimates, other roadway attributes are generated, including congestion speed and community-to-community travel time. These data provide valuable insight as to the general quality of service, but reflect a rather macro-level evaluation of the traffic conditions.

To determine the quality of service differences between the two master plan scenarios, the Traffic & Transportation Division refined the information to estimate the changes in (1) intersection congestion levels, (2) average trip lengths by community, (3) travel time to and from the Town Center, (4) transit use by Town Center residents and employees, and (5) origins and destinations of the users of the major roadways supporting the Town Center. Each of these pieces of information assist in quantifying the quality of transportation service under the two concept plans.

Not all of the transportation objectives can be quantified by a travel demand model, particularly when estimating the benefits twenty-five plus years into the future. However, the guidance documented in the two Town Center Master Plan chapters provides sufficient information to determine the strengths and weaknesses of the future transportation network, particularly for the accessibility and neighborhood-oriented objectives.

The following comparison aims to evaluate or score (according to a scale of excellent, good, adequate, sub-par, poor), elements of the existing and proposed Master Plans according to those transportation goals and objectives that pertain to the Town Center Master Plan.

### **Policy 1: Enhance the mobility of people, goods, and services.**

#### **Recommendation 1: Reduce travel time to activity centers.**

- Current Master Plan: Sub-par
- Proposed Master Plan: Sub-par

Based on an analysis of travel time, trips taken by residents of Rockville will be almost 10% shorter under the proposed Master Plan than in the current Master Plan due to a stronger activity center in the town center, whereas employees in Rockville will have an almost 10% longer trip under the same conditions.

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<sup>1</sup> The term land activity refers to the amount of households and employees existing in the forecast year, as opposed to a simple zoning designation. The zoning does not generate trips; households and employees have associated trip generation rates.

**Recommendation 2: Minimize congestion where appropriate.**

- Current Master Plan: Sub-par
- Proposed Master Plan: Sub-par

Under the 2025 proposed Master Plan, there is a 1-3% increase in traffic congestion at 8 of the 13 Town Center intersections. Under the same conditions the percentage of trips with a destination in the Town Center (as opposed to through trips) increases up to five percentage points. While three intersections possess minimal congestion differences, MD 28 / Maryland Avenue increases by 7% and Maryland Avenue / Fleet Street increases by 10%. In an effort to protect the abutting neighborhoods, MD 28 / MD 189 has no plans for lane expansion

	Intersection	Level of Service		
		1998	2025 Current Plan	2025 Proposed Plan
1	MD 355 at Mannakee Street	A-C	D	D
2	MD 355 at N. Washington Street	A-C	F <sup>2</sup>	F <sup>2</sup>
3	N. Washington Street at Beall Avenue	A-C	A-C	A-C
4	MD 355 at Beall Avenue	A-C	A-C	A-C
5	N. Washington Street at Middle Lane	A-C	A-C	A-C
6	MD 355 at Middle Lane	E	F <sup>3</sup>	F <sup>3</sup>
7	MD 189 at MD 28	A-C	F <sup>4</sup>	F <sup>4</sup>
8	N. Washington Street at MD 28	A-C	A-C	D
9	Maryland Avenue at MD 28	A-C	D	E <sup>5</sup>
10	MD 355 at MD 28	D	E <sup>3 6</sup>	E <sup>3 6</sup>
11	MD 28 at MD 586	F	F <sup>3 6</sup>	F <sup>3 6</sup>
12	Maryland Avenue at Fleet Street	A-C	A-C	D
13	MD 355 at First Street	D	F <sup>6</sup>	F <sup>6</sup>

While congestion is slightly worse in the proposed concept plan, average trip lengths for City residents decrease by 10%. This occurs due to the opportunities of jobs and shopping closer the where residents live. However, employees within the City travel approximately 10% longer, due to the slight increase in congestion.

<sup>2</sup> Included in the analysis was an additional lane on the eastern approach and pedestrian improvements will be introduced at this intersection. The intersection will be at D/E limit by 2005.

<sup>3</sup> The State is planning intersection improvements, which may include grade separation. The capacity was not included in the analysis.

<sup>4</sup> A single westbound through lane makes the intersection fail, but will remain in its existing state to regulate traffic through the West End neighborhood.

<sup>5</sup> Through traffic diverted from I-270 and points west will increase as West Montgomery reaches capacity.

<sup>6</sup> Intersection failure is due to north/south and east/west major connectors carrying through traffic.

Travel times to and from the Town Center would increase slightly under the proposed master plan scenarios.

**Recommendation 3: Increase transit use by residents and employers.**

- Current Master Plan: Adequate
- Proposed Master Plan: Adequate

Both the current and proposed Master Plans discuss transit accessibility but make little mention of specific transit improvements in the town center, such as circulator buses or additional transit facilities. Under both scenarios, transit ridership is below the regional average in all areas other than the town center for employees in Rockville. The proposed Master plan shows a 28% increase in transit ridership from the town center, increasing transit ridership from 14% to 18%. Transit ridership in areas surrounding the town center either increased slightly or remained constant under the proposed Master Plan.

Under both scenarios we see the highest percentage of Rockville resident transit use near the Rockville and Twinbrook Metrorail stations with up to 34% transit ridership. On average, residents of Rockville used transit 7% more than employees in Rockville.

The current Master Plan refers to transit incentives to take advantage of the existing Metrorail station and bus access to the Town Center. Additionally, the Plan states that pedestrian access to transit should be given priority over automobiles in site and building design.

The proposed Master Plan outlines planning and design principles to be implemented that will make the Rockville Metrorail Station both an origin and destination, integrating mixed uses and keeping strong connections to the Town Center both at street level and at the pedestrian promenade. In addition there should be accommodations for transfers between modes such as pedestrian paths, bus shelters, kiss-and-ride stops and bike racks close to the main entrances of Metrorail stations.

**Recommendation 4: Construct multi-modal transportation improvements to support the impacts resulting from land development (Adequate Public Facilities).**

This recommendation is not scored, as this will be determined during the development review process.

The current Master Plan has little discussion specific to multi-modal transportation improvements.

The proposed Master Plan discusses accommodations to encourage transfers between modes of transportation. The locations of pedestrian circulation paths, bus shelters, 'kiss and ride' stops, and bike racks are crucial; they should be located as close to the main entrances of the station as possible.

**Recommendation 5: Maximize incentives for demand management strategies.**

This recommendation is not scored as this is addressed in both citywide transportation chapters.

The current Master Plan states that the Standard Traffic Methodology should continue to accommodate alternative traffic mitigation steps such as ride-share, transportation management and other measures to discourage the use of the single occupant vehicle.

The plan goes on to say that transit incentives should be encouraged to take advantage of the existing Metro rail station and bus access to the Town Center. A concept similar to the Metrorail Performance District in the RPC zone should be explored for the properties near Metrorail as part of an implementation strategy. Participation by employers in transit management programs should be encouraged. A transit enhancement plan for the Town center should be implemented in cooperation with the County, WMATA, the private sector and the State.

The proposed Master Plan does not formally outline incentives for demand management strategies.

**Policy 2: Promote a transportation system that is multi-modal, accessible, and friendly to all users.**

**Recommendation 1: Improve pedestrian connections from households to activity centers.**

- **Current Master Plan: Excellent**
- **Proposed Master Plan: Excellent**

Each Master Plan has given detailed attention to Pedestrian elements in the Town Center improving pedestrian connectivity between neighborhoods, activity centers and transit connections as well as attention to elements that will enhance pedestrian safety.

The current Master Plans stresses the need for pedestrian access to transit to be given priority over automobiles in site and building design and the need for a continuous pedestrian network to allow comfortable and effective circulation throughout the Town Center. Additionally, sidewalks along the transit station should be broad enough to accommodate active pedestrian movement.

The proposed Master Plan features a pedestrian promenade that will create an attractive entryway into the Town Center from the Rockville Metrorail Station for visitors, commuters and residents. The plan also features an L-shaped pedestrian spine extending from the Metrorail station westward along Montgomery Avenue and a northward extension of Maryland Avenue to North Washington Street.

**Recommendation 2: Improve bicycle connections from households to activity centers.**

- **Current Master Plan: Adequate**
- **Proposed Master Plan: Adequate**



Unfortunately, the documents contain minimal discussion of bicycle connections in the town center in both Master Plans. However, while the current Master Plan makes little mention of bicycle facilities, the proposed Master Plan describes streets designed to accommodate motor vehicles, pedestrians and cyclists appropriately and states that facilities for cyclists should be incorporated into street improvements and open space plans.

In an addendum to the proposed Master Plan regarding bikeways, there is a detailed list of streets and bikeways to be evaluated for future bike facilities in the Town Center. The citywide bicycle plan outlines a network of bicycle routes on main corridors and access roads to the town center as well as within the town center itself. In addition, any new development in the Town Center is responsible to accommodate bikeways and bike parking.

**Recommendation 3: Increase transit accessibility.**

- **Current Master Plan: Sub-par**
- **Proposed Master Plan: Sub-par**

Neither plan discusses parking facilities near transit facilities or long term capacity to accommodate feeder buses. The current Master Plan refers to transit incentives to take advantage of the existing Metrorail station and bus access to the Town Center (p. 70). Additionally, the Plan states that pedestrian access to transit should be given priority over automobiles in site and building design.

The proposed Master Plan outlines planning and design principles to be implemented that will make the Rockville Metrorail Station both an origin and destination, integrating mixed uses and keeping strong connections to the Town Center both at street level and at the pedestrian promenade. In addition there should be accommodations for transfers between modes such as pedestrian paths, bus shelters, kiss-and-ride stops and bike racks close to the main entrances of Metrorail stations.

**Recommendation 4: Increase carpool and vanpool use.**

- **Current Master Plan: Poor**
- **Proposed Master Plan: Poor**

There is little or no discussion in either plan of carpool and vanpool use however this topic is covered in the citywide transportation chapter of the proposed Master Plan.

The current Master Plan incorporates alternative traffic mitigation steps to discourage the use of the single occupant vehicle.

This oversight may have a direct impact on parking supply in the town center.

**Policy 3: Respect and protect neighborhoods especially from the impacts of regional traffic.**

**Recommendation 1: Minimize non-local traffic in neighborhoods.**

- **Current Master Plan: Good**
- **Proposed Master Plan: Adequate**

The proposed Master Plan seeks to protect residential neighborhoods by facilitating a comfortable transition toward the East Rockville and Lincoln Park neighborhoods. The area north of Park Road would include less dense office buildings than the area west of Rockville Pike in order to facilitate this transition. As the center of the Rockville community, the Town Center will be well connected to adjacent neighborhoods but will not use them for funneling tremendous amounts of traffic.

**Policy 5: Minimize the neighborhood separation effects of major transportation facilities.**

**Recommendation 1: Retrofit pedestrian and bike connections between existing neighborhoods that are divided by major transportation facilities.**

- **Current Master Plan: Sub-par**
- **Proposed Master Plan: Good**

The proposed Master Plan outlines a number of projects and corridors to establish pedestrian and bike connections between existing neighborhoods and the Town Center. The Plan outlines an improved bridge that will enhance pedestrian crossing.

**Recommendation 2: Retrofit the existing street network to “bridge” the gap between the communities.**

- **Current Master Plan: Adequate**
- **Proposed Master Plan: Good**

The proposed Master Plan outlines a plan to study new connections from Rockville’s east side neighborhoods, currently separated by the Metrorail and CSX railroad tracks, to the Town Center. The Plan identifies Beall Avenue and Church Street as potential places for these connections.

In the proposed Master Plans traffic patterns will be altered with redeveloped Metrorail station; mechanisms are to be put in place for reducing traffic impacts on neighborhoods. If executed appropriately, the proposed connectors to the east side could provide relief while simultaneously improving access to the Town Center from East Rockville.